

Amendments to the Claims:

Following is a complete listing of the claims pending in the application, as amended:

1. (Currently Amended) A transceiver operable to process Bluetooth and wireless local area network (wireless LAN) signals, the transceiver comprising:

a radio-frequency unit;

a digital baseband unit configured to generate a mode control signal indicative of Bluetooth-compatible mode or wireless LAN-compatible mode operation;

a dual-mode filter and amplifier unit having a first Bluetooth-compatible mode and a second wireless LAN mode, the dual-mode filter and amplifier unit coupled to the radio frequency unit and digital baseband unit and configured to select an operating mode from the first Bluetooth-compatible mode and second wireless LAN-compatible mode [[modes]] responsive to said mode control signal;

the dual mode amplifier unit further comprising

at least a first stage having an operational amplifier that is in use during both the Bluetooth-compatible mode and the wireless WLAN mode;

at least a first feedback component including at least one resistor; and

at least a first switch coupled to said feedback component and said operational amplifier having a first mode and a second mode, such that in said first mode the dual-mode amplifier unit is operable in said first Bluetooth-compatible mode and the feedback component is disconnected from said operational amplifier and in said second mode the dual-mode amplifier unit is operable in said second 802.11 wireless LAN mode and the feedback component is coupled between an input and an output port of said operational amplifier;

said first feedback component including a resistor and a capacitor coupled to said first feedback component and said first switch;

the dual-mode amplifier unit being responsive to the mode control signal through a plurality of switches to change the operation between the Bluetooth-compatible mode configuration and the wireless WLAN mode configuration so that:

(i) during operation in the Blue-tooth compatible mode the dual-mode amplifier unit is configured as four-stage limiters with AC coupling, a first resistor and a bias current for the operational amplifier setting the amplitude of the limiters output, and a first capacitance C1 and a second resistance R2 setting the AC coupling high-pass corner frequency; and

(ii) during the 802.11b WLAN mode the dual-mode amplifier stage is configured as a four-stage voltage gain amplifier and the total gain range is set by the resistance ratio ($R4/R3$) of a fourth resistance $R4$ to a third resistance $R3$, and the four voltage gain amplifier stages are DC coupled.

2. (Original) A transceiver according to claim 1, wherein the dual-mode filter and amplifier unit comprises a dual-mode filter having at least one component in use during both the Bluetooth-compatible mode and the wireless LAN mode.

3. (Original) A transceiver according to claim 1, wherein the dual-mode filter and amplifier unit comprises a dual-mode amplifier having at least one component in use during both the Bluetooth-compatible mode and the wireless LAN mode.

4. (Original) A transceiver according to claim 2, wherein said at least one component includes a transistor.

5. (Original) A transceiver according to claim 3, wherein said at least one component includes an operational amplifier.

Cancel Claims 6-9 without prejudice

6. (Cancelled)

7. (Cancelled)

8. (Cancelled)

9. (Cancelled)

10. (Currently Amended) A dual-mode amplifier unit having a first Bluetooth-compatible mode, and having a second 802.11 [[b]] WLAN mode, the amplifier comprising:

at least a first stage having an operational amplifier that is in use during both the Bluetooth-compatible mode and the wireless WLAN mode;

at least a first feedback component including at least one resistor; and

at least a first switch coupled to said feedback component and said operational amplifier having a first mode and a second mode, such that in said first mode the dual-mode amplifier unit is operable in said first Bluetooth-compatible mode and the feedback component is

disconnected from said operational amplifier and in said second mode the dual-mode amplifier unit is operable in said second 802.11 [[b]] WLAN mode and the feedback component is coupled between an input and an output port of said operational amplifier;

said first feedback component includes a resistor and a capacitor coupled to said first feedback component and said first switch;

the dual-mode amplifier unit being responsive to a mode select control signal through a plurality of switches to change the operation between the Bluetooth-compatible mode configuration and the wireless WLAN mode configuration so that:

(i) during operation in the Blue-tooth compatible mode the dual-mode amplifier unit is configured as four-stage limiters with AC coupling, a first resistor and a bias current for the operational amplifier setting the amplitude of the limiters output, and a first capacitance C1 and a second resistance R2 setting the AC coupling high-pass corner frequency; and

(ii) during the 802.11b WLAN mode the dual-mode amplifier stage is configured as a four-stage voltage gain amplifier and the total gain range is set by the resistance ratio (R4/R3) of a fourth resistance R4 to a third resistance R3, and the four voltage gain amplifier stages are DC coupled.

11. (Original) A dual-mode amplifier unit according to claim 10, wherein said first feedback component includes a resistor.

12. (Original) A dual-mode amplifier unit according to claim 10, further comprising a capacitor coupled to said first feedback component and said first switch.

13. (Original) A dual-mode amplifier unit according to claim 10, wherein during operation in said first Bluetooth-compatible mode, said first stage operates as a limiter.

14. (Original) A dual-mode amplifier unit according to claim 10, wherein during operation in said second 802.11 WLAN mode, said first stage operates as a voltage gain amplifier.

15. (Currently Amended) A dual-mode amplifier unit having a first Bluetooth-compatible mode, and having a second 802.11 b WLAN mode, the amplifier comprising:

at least a first stage having an operational amplifier;

at least a first feedback component;

at least a first switch coupled to said feedback component and said operational amplifier having a first mode and a second mode, such that in said first mode the dual-mode amplifier

unit is operable in said first Bluetooth-compatible mode and the feedback component is disconnected from said operational amplifier and in said second mode the dual-mode amplifier unit is operable in said second 802.11 b WLAN mode and the feedback component is coupled between an input and an output port of said operational amplifier; and A dual-mode amplifier unit according to claim 10, further comprising

a capacitor coupled to an output of said operational amplifier and at least a second switch coupled to said capacitor, such that during operation in said first Bluetooth compatible mode, said capacitor at least in part determines an AC coupling corner frequency of said first stage.

16. (Original) A transceiver including a dual-mode analog baseband having reduced IC chip area, the transceiver including a filter according to claim 6 coupled to an amplifier according to claim 10.

17. (Original) A transceiver according to claim 16 wherein said filter and said amplifier are formed on a single semiconductor substrate.

Cancel Claims 18-22 without prejudice.

18. (Cancelled)

19. (Cancelled)

20. (Cancelled)

21. (Cancelled)

22. (Cancelled)

23. (Currently Amended) A method to implement a dual-mode amplifier unit having a first Bluetooth-compatible mode, and having a second 802.11b WLAN mode, the method comprising:

providing at least a first stage having an operational amplifier;

providing at least a first feedback component; [[and]]

coupling at least a first switch having a first mode and a second mode to said feedback component and said operational amplifier, such that in said first mode the dual-mode amplifier unit is operable in said first Bluetooth-compatible mode and the feedback component is disconnected from said operational amplifier and in said second mode the dual-mode amplifier

unit is operable in said second 802.11b WLAN mode and the feedback component is coupled between an input and an output port of said operational amplifier; and

the dual-mode amplifier unit being responsive to a mode control signal to change the operation between the Bluetooth-compatible mode and the WLAN mode so that:

(i) during operation in the Blue-tooth compatible mode the dual-mode amplifier unit is configured as four-stage limiters with AC coupling, a first resistor and a bias current for the operational amplifier setting the amplitude of the limiters output, and a first capacitance C1 and a second resistance R2 setting the AC coupling high-pass corner frequency; and

(ii) during the 802.11b WLAN mode the dual-mode amplifier stage is configured as a four-stage voltage gain amplifier and the total gain range is set by the resistance ratio ($R4/R3$) of a fourth resistance R4 to a third resistance R3, and the four voltage gain amplifier stages are DC coupled.

24. (Original) A method according to claim 23, further comprising a capacitor coupled to said first feedback component and said first switch.

25. (Currently Amended) A method to provide an IC with reduced chip area, the IC including a dual-mode analog baseband, comprising implementing a filter ~~according to the method of claim 24~~, implementing an amplifier according to the method of claim 23, and coupling said filter and said amplifier.